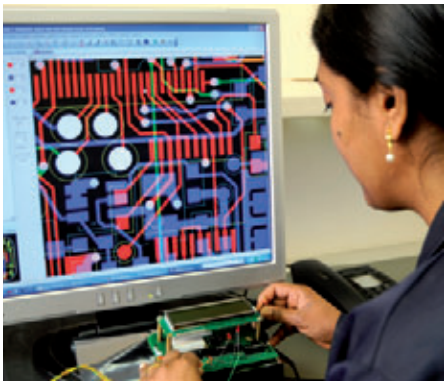
VALEPORT

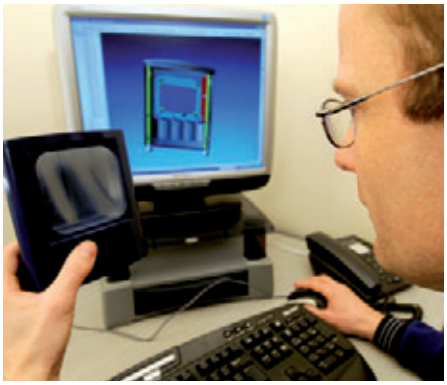
DESIGN • MANUFACTURE • TESTING • CALIBRATION
QUALITY UNDERWATER INSTRUMENTATION

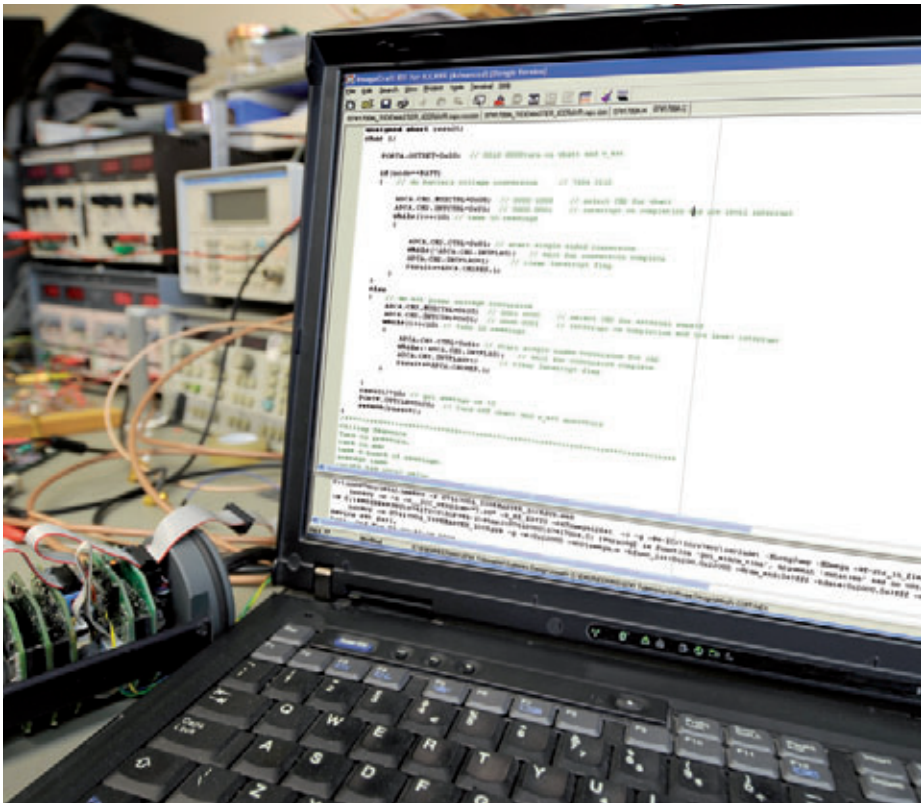
Catalogue Summer 2013

Design

Our products come from our customers; the skill is translating a market-led idea into a specification that can be met by our team of mechanical, electronic, firmware and software R&D engineers.

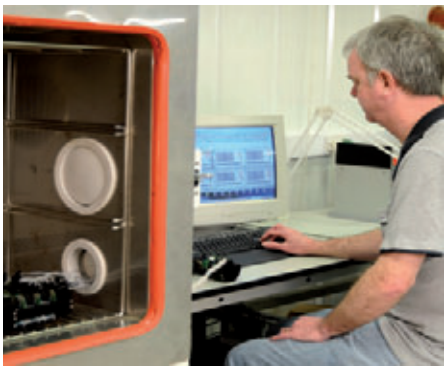


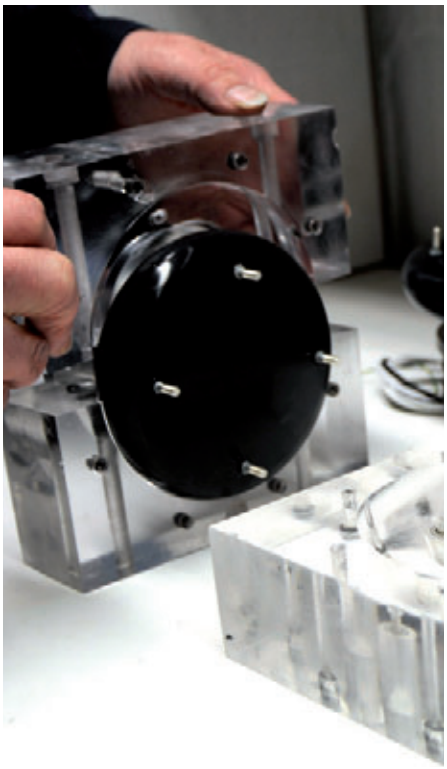




Manufacture & Test

Quality in the manufacturing process is paramount, from the mechanical parts from our CNC machine shop, through rigorous environmental and batch testing of pcbs in our ESD protected factory, to final assembly of the sensors and instruments we offer.





Service and Calibration

The sale of an instrument is the start of our relationship with a customer, not the end. With facilities including a tow-tank, ultra-stable temperature and salinity baths, high accuracy temperature bridges and standards, and pressure test vessels for all our products, our Service and Calibration staff are able to keep your instrument performing as new for many years. That is why we offer a 12 month warranty on all services – to give you the same confidence in our products that we have.

Sound Velocity Sensors & Profilers

Sound Velocity Sensors and Profilers from Valeport, the world leaders in Sound Velocity technology – a position achieved by both innovative development and meticulous attention to detail throughout the design, manufacture and especially calibration processes. Having been established at the forefront of this field nearly a decade ago with Digital Time of Flight technology, Valeport have now made a series of incremental changes to reinforce that position, ensuring that Valeport SV sensors offer levels of performance that are demonstrably far in excess of even the latest offerings from our competitors.

- Genuine Accuracy of ±0.02m/s (Total Error Budget)
- Precision (peak to peak noise) of ±0.002m/s
- Operating range of 1375m/s to 1900m/s (covering all environments from fresh water to the Dead Sea and the Marianas Trench)
- Data rates up to 60Hz (instrument dependent)

As well as having a range of standard products, we are also able to offer customised solutions, thanks to our in-house design and manufacture capability.

Contact our Sales team to discuss your Sound Velocity Sensors and Profiler requirements, and decide on the right instrument for the job.

MIDAS Sound Velocity Profiler

The MIDAS SVP is the new name for Valeport's renowned Model 650 Mk2 Sound Velocity Profiler, and it gives the most accurate Sound Velocity Profiles currently possible. As well as using the world leading digital time of flight sound speed sensor, this instrument also has a ±0.01% pressure sensor, and features Valeport's synchronised sampling technique to guarantee that all sensors are sampled at exactly the same point during a profile. Titanium construction and a large memory make it suitable for rapid profiling down to 6000m depth.

MIDAS SVX2 Combined CTD/SVP

The MIDAS SVX2 is the latest version of Valeport's unique instrument. Recognising the conflict faced by users requiring the superior Sound Velocity data from an SVP, but still needing the Salinity and Density data from a CTD, the MIDAS SVX2 combines both technologies to give the best of both worlds. Now fitted with a 0.01% pressure sensor as standard, the SVX2 also uses synchronised sampling to ensure perfect profiles, and since the digital time of flight SV sensor is the most accurate in the world, it's also possible to compare the true sound velocity data with that generated by commonly used equations.

Monitor SVP Sound Velocity Profiler

The Monitor SVP has been developed from Valeport's world leading MIDAS SVP, utilising the exceptional digital time of flight sound velocity sensor and synchronised sampling technique, but packaged as a smaller, lightweight unit to suit small boat or shallow water applications.

Sound Velocity Sensors & Profilers

MiniSVS
Sound Velocity Sensors

The miniSVS Sound Velocity Sensors use state of the art digital “time of flight” technology to provide the lowest noise, highest accuracy, best resolution sound velocity data available. Small size and a choice of sensor lengths down to just 25mm make the sensor suitable for a variety of applications, and the optional pressure or temperature sensor adds versatility. There is a choice of data formats to allow interface to existing systems. We will also consider OEM and custom designs.

MiniSVP
Sound Velocity Profiler

The miniSVP is a new budget Sound Velocity Profiler, designed to make the best SV measurements in the world available to everyone. Featuring Valeport’s unique acclaimed “time of flight” SV sensor, the miniSVP is available in either 500m rated acetal or 6000m rated titanium versions. A single C cell and large Flash memory allow hundreds of profiles to be recorded, and the pre-programmed profiling patterns allow it to be setup and deployed quickly and easily.

Rapid SV Profiler

The Rapid SV profiler has been developed for fast collection of Sound Velocity Profiles, without compromising the quality of data. The world’s most accurate Sound Velocity sensor with virtually instantaneous response time, data acquisition rates of up to 32Hz housed in a low drag housing results in the highest quality profiles at drop rates up to 5m/s.

Sound Velocity Sensors & Profilers

Soundbar 2
Digital Bar Checker

The SoundBar 2 Digital Bar Checker offers a convenient, quick and safe method of obtaining sound velocity data for calibration of echosounders and other acoustic devices. Developed from the acclaimed miniSVS sound velocity sensor, the SoundBar 2 uses a digital time of flight technique that gives the most accurate sound velocity data in the world. Coupled to a pressure sensor in a durable acetal housing, the SoundBar 2 is lowered through the water column, measuring the sound velocity as it goes. The display unit records this data and presents the mean sound velocity value over the profile, which may then be output in a variety of industry standard formats to the echosounder.

Thru Hull SV

A specific configuration of Valeport's Sound Velocity Sensor, allowing the probe to be deployed through the vessel's hull and safely recovered for maintenance without requiring docking. It is particularly useful for multi-beam applications where knowledge of sound velocity adjacent to the multi-beam transducer is necessary. The probe is also available with an optional temperature sensor.

Custom SV packages

Our in-house design, technology and manufacturing skills allow custom made sensor packages to suit most needs. Whether it is OEM or complete sensors, we expect to meet your sensor requirements with the highest accuracy possible. Typical solutions have been for AUVs, Submarines, Streamers, Inertial Navigation Systems and USBL & LBL system transponders. Please contact the factory to discuss your requirement.

Tide Gauges

Tide Gauges provide perhaps the most fundamental of all marine measurements - accurate tidal information. This is critical for Port & Harbour Operations, Dredging, Surveying, instrumentation deployments, and many other applications.

If you are looking for tide gauge equipment that can be deployed for either shore based or offshore / seabed applications, together with telemetry packages for secure data transfer then Valeport can offer a comprehensive range of equipment. Features include:-

- logging of tidal data for historical purposes;
- ability to provide real time information,
- transmission of data over a variety of telemetry links,
- network capabilities,
- fixed displays or access through web or local intranet,
- seabed fixing or in-line mooring,

Whatever the application, the performance and reliability of Valeport Tide Gauges is renowned.

Contact our Sales team to discuss your Tide Gauge requirements, and decide on the right instrument for your job.

TideMaster Portable Tide Gauge

The TideMaster is a small, cost effective Water Level Recorder, specifically designed for applications where the user requires an accurate record of water height, but with the added option of meteorological data via an ultrasonic wind speed and direction sensor. Suitable for use in fresh or salt water, the TideMaster can be deployed for up to 1 year, dependant on the sampling rate, with instrument set up and data retrieval via an optional display panel or using the PC software supplied. Alternatively, the system can be supplied with radio modules for real time data transmission.

miniTIDE Self Recording Tide Gauge

The miniTIDE is a small Tide Recorder, designed for short term underwater deployments. Fitted with a 0.01% temperature compensated piezo-resistive cell, the miniTIDE will record high accuracy pressure data for a period of 1 month at a 10 minute sampling interval, using a single alkaline C cell. This makes it ideal for use in short term projects or for academic studies. Available with a choice of pressure ranges, and with either 500m acetal or 6000m titanuim housings.

MIDAS WLR Water Level Recorder

The MIDAS WLR replaces the popular Model 730T as Valeport's Water Level Recorder / Seabed Tide Gauge. Designed for long or short term deployments in offshore environments, or locations where a traditional shore based tide gauge is impractical, the MIDAS WLR may be moored in line or to the seabed. The standard instrument is fitted with a 0.01% accuracy pressure sensor and acetal housing for up to 500m depth rating, with a deep water titanium housed option also available.

Tide Gauges

VRS-20
Radar Level Sensor

The VRS-20 is a pulsed k-band radar level sensor developed by Valeport to work seamlessly with the TideMaster tide logger, operate standalone with optional integrated GPRS telemetry or interface to a third party data logger. Versatile and simple to install, the VRS-20 addresses a number of the issues traditionally associated with water level measurement. Non-contact technology removes the installation, corrosion & fouling issues of submerged sensors, while simplifying datum control. Accuracy and performance are unaffected by changes in water density and atmospheric conditions.

Telemetry

Telemetry Instruments provide the solution to the common need to transmit data reliably, quickly and cost effectively from remote locations. Valeport offer a range of instruments from short range Bluetooth modules, medium range VHF/UHF radio modules and range independent GSM/GPRS modules. These can be housed in rugged housings for shore based communications or mounted on buoy/ platforms for offshore installations.

Contact our Sales team to discuss your Telemetry requirements, and decide on the right solution for the job.

Telemetry & Software

Valeport telemetry solutions are centred on our IP67 housed package offering GSM/GPRS, UHF or VHF transmission options. The robust housing contains back up battery capability to cover short term survey work or power outs. Compatible with most Valeport products, the units are designed to provide transparent links between instrument and operating software, as well as third party Internet / FTP data display services such as PortLog from OceanWise, UK.

Current Meters & Open Channel Meters

Current Meters and Open Channel Meters have been a speciality of Valeport's since the company was first formed in 1969. The company started making instruments for measuring the speed of the water in London's River Thames; since then our product range has grown, but our expertise in current flow measurement remains.

Whichever type of instrument your require, whether it's the traditional impeller mechanism, or the high accuracy electromagnetic type, Valeport can offer a solution. Configurations are available that are suitable for use in a wide variety of applications, from hand held measurements in the smallest streams, through modelling experiments in the laboratory, to self-contained instruments for navigable rivers, estuaries, ROVs and the deep ocean.
Our impeller instruments use the simple premise of measuring the speed of rotation of a helix in the water. PTFE bearings eliminate the need for specialised lubricants and the magnetic contact closure minimises the moving parts in the system - this also allows the sensor itself to be remote from the measuring electronics (ideal in deep water applications).

The electromagnetic sensors use the Faraday Principle to measure the water speed.
As a conductor (water) moves through an electromagnetic field (generated by the sensor), it generates a voltage that is measured by the sensor electrodes. Modern day signal conditioning electronics and filtering techniques allow highly accurate measurements to be made, and there is a choice of sensor shapes and sizes to suit the application. The solid state sensors and standard titanium / polyurethane construction provide excellent corrosion resistance, and depth ratings up to 5000m.

Contact our Sales team to discuss your Current Meter requirements, and decide on the right instrument for the job.

Model 108 MkIII
Direct Reading Current Meter

The Model 108 MkIII is the third generation of the successful Valeport 108 direct reading current meter, and has been developed to meet the needs of oceanographers, hydrographers and surveyors. Speed and Direction sensors are fitted as standard, with optional Conductivity, Temperature and Depth sensors. Full control and set up of the 108 MkIII and viewing of data is achieved directly via the customer's PC with Valeport's DataLog™ software or the Model 8008 Control Display Unit.

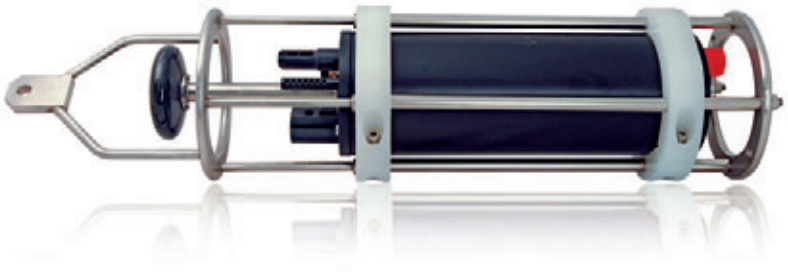
Model 308
Self Recording Current Meter

The Model 308 has been developed using proven industry standard sensors to meet the needs of oceanographers, hydrographers and surveyors who require an accurate current meter with flexibility of configuration and large memory capacity, which can output data directly to a PC and can be used in both self recording and direct reading modes with a variety of cables. All data is compatible with Valeport's DataLog™ software.

Current Meters & Open Channel Meters

MIDAS ECM Self Recording Electromagnetic Current Meter

The MIDAS ECM is a highly versatile point current meter, designed with durability and ease of deployment in mind. Valeport's latest electronics architecture allows multiple additional sensors, and a variety of communications options, making it one of the few multiparameter current meters that allows real time operations over several thousand metres of cable, as well autonomous deployments. A choice of titanium or acetal housing gives depth rating up to 5000m.



Model 106 Lightweight Current Meter

A low cost, lightweight alternative to larger flow meters, ideal for use in applications where the superior durability and depth rating of Valeport's larger meters is not necessary. Utilising the standard Valeport 125mm diameter impeller, the Model 106 features speed and direction parameters as standard, with further options of temperature and depth. Data (logged or real time) is compatible with Valeport's DataLog™ software. The instrument is manufactured from titanium and polymers, giving excellent resistance to corrosion, whilst maintaining a small size and low weight. These features make the Model 106 the ideal instrument for coastal and estuarine applications, and other light duty survey work.

Model 803 ROV Electromagnetic Current Meter

The Model 803 is designed specifically for use on ROVs and other underwater vehicles, providing real time relative water velocity information for pilots. It may be fitted to ROVs to provide actual through the water speeds, or fitted to Tether Management Systems to give measurement of local flow conditions. Measurements are updated every second and the ROVLog™ software provides a graphic and data display, and enables data to be logged to disk.

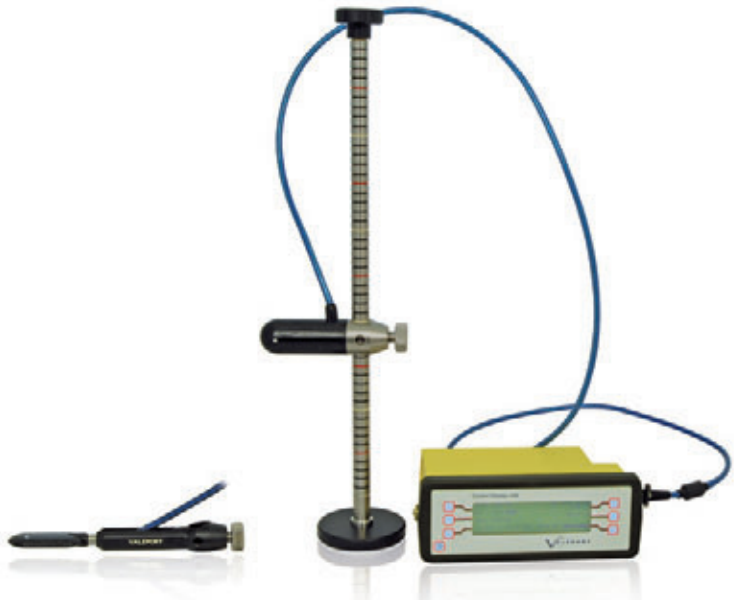
Current Meters & Open Channel Meters

Model 802 2 Axis Electromagnetic Current Meter

The Model 802 is the very latest in Valeport's electromagnetic flow sensing technology, developed over many years from the original IOS design. State of the art electronics design ensures low power operation, yet maintaining low noise and high stability. A range of sensor heads and electronics packages mean that the Model 802 can be used in a wide variety of real time applications, or can easily be interfaced to customers' existing systems to provide a reliable, accurate current meter.

Model 801 Electromagnetic Open Channel Flow Meter

This small solid-state sensor has been designed specifically for use in open channels where fouling by weed or sewage can be a problem. Valeport's experience in electromagnetic technology has ensured that the Model 801 is a high precision instrument which can be relied upon to give accurate readings (±0.5% of reading plus zero stability) over a wide flow range (±5 m/sec) in only 5cm of water. The control display unit provides a choice of averaging modes, standard deviation of the data, and an optional logging facility.



Model 001 & 002 Open Channel Flow Meters

The Valeport 'Braystoke' Model 001 and Model 002 flow meters provide a cost effective and reliable method of monitoring flow in a variety of environments, including salt, fresh and effluent water, from shallow streams to tidal waterways. The meters benefit from the design of the impeller bearings, which give low threshold velocity and consistent performance. Their ease of operation make the 001 and 002 ideal for field study use and an invaluable tool for hydrometric work. Available as either a wading or suspension set, all systems are supplied with the Model 0012B real time control display unit.

Wave Recorders

Wave Recorders from Valeport are a “PUV” type that use Linear Wave Theory to analyse the pressure and current oscillations generated by the wave action. In near shore environments (<20m depth) it is not always possible to use a surface following buoy to measure wave activity. In these circumstances the most cost effective solution is a bottom mounted, pressure based device. What makes Valeport’s wave recording instruments different is that this data processing is all carried out on board, giving you:-

- descriptive statistics,
- energy spectra, and
- high resolution directional spectra all in real time.

Of course, all the raw data is logged as well, so you can use your own post-processing routines if you prefer.

Whether you are new to the field of wave measurement or an experienced user, the Valeport range offers you the perfect mix of simplicity and versatility to ensure that you get exactly the data you need, every time.

Contact our Sales team to discuss your wave recorder requirements, and decide on the right instrument for the job.

MIDAS DWR
Directional Wave Recorder

The MIDAS DWR Directional Wave Recorder replaces the old Model 730D instrument, and represents a significant advance in PUV wave recording technology. As well as the standard non-directional data available from the MIDAS WTR, the MIDAS DWR also performs full onboard directional data analysis, allowing real time directional information at an unsurpassed 2° resolution. The unique features of the MIDAS DWR make it the most cost-effective solution to directional wave monitoring requirements in all shallow water coastal applications.

MIDAS WTR
Wave / Tide Recorder

The MIDAS WTR replaces the old Model 730 Wave Recorder. Whilst continuing to use the proven Linear Wave Theory wave analysis method, the MIDAS WTR benefits from Valeport’s latest sensor technology, together with 64 bit data processing, and an improved range of sampling options. Quick change battery carousel and intuitive operating software make the MIDAS WTR one of the most versatile yet easy to use pressure based wave recorders available.

CTD and Multiparameter Instruments

The CTD is perhaps the most commonly used tool in an oceanographer's armoury, providing detailed profile and time series data on the measured parameters Conductivity, Temperature and Pressure, but more particularly the calculated values of Salinity, Density and Sound Velocity.

Valeport offers a selection of instruments, from simple plug on sensors for OEM applications through hand held systems and devices for long term monitoring at fixed sites, to multiparameter profiling systems for deep ocean applications.

All Valeport CTDs use our own inductive Conductivity sensors. Digital sampling techniques ensure high accuracy, and the unique construction gives sensor stability at any depth. Temperature is always measured with a fast response PRT (Platinum Resistance Thermometer), and instruments also use industry standard strain gauge or resonant quartz pressure sensors.

Contact our Sales team to discuss your CTD and Multiparameter Instrument requirements, and decide on the right instrument for the job.

MIDAS CTD Profiler

The MIDAS CTD (previously known as the Model 606) is Valeport's premier CTD Profiler. High accuracy sensors (including ±0.01% pressure) and robust titanium design allow reliable operation to 6000m depth, under the harshest conditions. It also features truly synchronised sampling to ensure that all sensors are sampled at exactly the same point during a profile. Primarily for use as a self recording profiler, the MIDAS CTD also has a range of communications options for real time use, and the low power consumption and large memory also make it suitable for longer term deployments.

MIDAS CTD+ Multiparameter Profiler

The MIDAS CTD+ is a revolutionary Multiparameter CTD, with a wide choice of standard sensors. Featuring Valeport's latest 400 Series electronics, the CTD+ will sample all fitted sensors at exactly the same instant, at up to 8Hz. Advanced setup software allows a variety of sampling regimes including burst modes, delay starts, and conditional sampling. With up to 64Mbyte memory and internal battery pack, as well as a selection of real time output formats, the CTD+ is perfect for both profiling or fixed mooring applications. In addition, the CTD+ may be used with Valeport own water bottle carousel.

miniCT Probe

The miniCT probe is Valeport latest direct reading Conductivity and Temperature sensor, featuring digital sampling techniques for improved performance, and high strength construction methods to ensure consistent performance and stability under extreme pressure. 500m acetal and 6000m titanium versions available, both with RS232 or addressable RS485 data outputs as standard.

CTD and Multiparameter Instruments

miniCTD Probe

The miniCTD is a new profiling CTD from Valeport, designed for short term or budget applications where sensor performance cannot be compromised. Utilising the same Conductivity and Temperature technology available on our larger instruments, the miniCTD runs on a single C cell, and is fitted with a large Flash memory to record several hundred profiles. Supplied with DataLog Express software, the device features a variety of pre-programmed sampling modes for easy setup and operation. Available in both 6000m titanium and 500m acetal versions.

Monitor CTD Profiler

Based on the leading MIDAS CTD Profiler, the Monitor CTD offers excellent performance but in a smaller, lightweight package for shallow water applications. With internal battery pack and large memory, the Monitor CTD is suitable for both self recording operations down to 500m depth, and real time use with a choice of data output protocols.

OEM CTD Sensors

Since our CTD technology is the product of our own in-house design expertise and manufacturing capability, we are able to provide OEM CTD solutions where appropriate using our established technology. The sensor shown is a specific configuration designed for integration into a monitoring tag for sea mammals, produced by the Sea Mammal Research Unit (SMRU), St Andrews University, UK. It utilises state of the art digital sampling techniques to provide high levels of accuracy in a miniaturised assembly, whilst maintaining extremely low power consumption and rapid response. Contact us to discuss other OEM variations for use in applications such as AUVs or other system integration requirements.

Echosounders & Bathymetry Instruments

Bathymetry: the science of measuring depth. Whether you are surveying, dredging or managing underwater operations, accurate bathymetric data is critical, be it overall water depth or the location of specific instrumentation within the water column. Valeport presents a variety of integrated instrumentation packages designed to provide that high quality data, whatever the application.

Valeport's unique digital signal processing techniques use fuzzy logic to pick out and lock onto the genuine echo, while automatic power and gain control means that erroneous echoes are minimised and accurate readings can be made in water depths as shallow as 30cm. As a stand alone altimeter, this technology is ideal for integration into bathymetry packs. Combining the technology with integral GPS receiver and on board data logging provide our echosounders with the benefits of maximum versatility and minimal deployment time.

Contact our Sales team to discuss your Echosounders and Bathymetry requirements, and decide on the right instrument for your job.

MIDAS Surveyor GPS Echosounder

The MIDAS Surveyor has been designed to offer a low cost solution for small scale hydrographic surveys. The system is supplied with a 210kHz transducer as standard, and uses Valeport's own advanced digital signal processing techniques to ensure high accuracy and reliable bottom tracking. With an integral SBAS enabled DGPS receiver, the MIDAS Surveyor will log position and depth data for over 30 hours, as well as performing on-line correction using external heave and tide data inputs. Options include an additional 33kHz transducer, or high accuracy 16 channel DGPS receiver.

MIDAS BathyPack Bathymetry Package

The BathyPack is one of Valeport's premier MIDAS products, using state of the art sensors to generate precision Sound Velocity and Density profiles for highly accurate depth and height data. The simple top-end PC software, BathyLog, also allows all profile data to be used to monitor and correct multiple miniIPS pressure sensors, giving you the complete picture with one integrated sensor suite.

Echosounders & Bathymetry Instruments

miniIPS
Intelligent Pressure Sensor

The miniIPS is a precision underwater pressure sensor; 0.01% accuracy, a titanium housing and a choice of pressure ranges make it a cost effective solution for offshore engineers, vehicle pilots, and other operators who require highly accurate depth information in real time. The miniIPS is also compatible with Valeport's MIDAS BathyPack and BathyLog software, allowing the depth data to be continually updated for Density variations in the water column.

Altimeter

The new Valeport Altimeter range uses state of the art DSP techniques to achieve exceptional range and accuracy. With both 200kHz and 500kHz versions available, even the 500kHz outperforms traditional 200kHz instruments in terms of range and resolution. These high accuracy Altimeters are supplied in compact titanium housings for operation in up to 6000m water depth. They can be easily interfaced with our own MIDAS Bathypack system, or customers' own systems via RS232, RS485 or analogue interfaces. An optional high accuracy 0.01% pressure transducer is available to enhance operational use.

Valeport, the UK's leading manufacturer of hydrometric, hydrographic and oceanographic instrumentation.

Technology You Can Trust

Established in 1969, Valeport designs and manufactures instrumentation for the oceanographic, hydrometric and hydrographic markets, with a worldwide customer base that includes the environmental, military, oil & gas, renewable, construction, dredging and civil engineering sectors.

Key to our reputation for supplying high quality, reliable instrumentation is our philosophy of retaining all aspects of the development and manufacturing processes in-house. Our riverside premises in the picturesque town of Totnes in the southwest of the UK houses all our facilities for designing, CNC machining, environmental testing, assembly, calibration and servicing of all our instruments.

This philosophy gives us complete control over every aspect of our products, allowing us to provide our customers with the right tools to do their jobs, with minimum fuss and maximum confidence.

Tide Gauges • Wave Recorders • Current Meters • Echo Sounders & Bathymetry • Sound Velocity • Ocean Engineering • Telemetry Instruments • CTD & Multiparameter

Notes

IN OUR ELEMENT

VALEPORT

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